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live and grow. Some remain, immortal but alone, like the ancient theorem of Pythagoras or perhaps in recent years Morley's Pentacle, that creation of tantalizing beauty and illusory simplicity. Most new ideas in geometry die early, or pass, by publication, into the condition of mummies or fossils; let our grateful recognition and praise follow then those fortunate worthies like Poncelet, whose genius has given us the fruitful ideas, problems and theories with a significance stretching far beyond their accidental first form, reappearing through the years in new embodiments, and so achieving a life if not perpetual, at least as long enduring as the present era of intellectual culture.

H. S. WHITE

VASSAR COLLEGE

THE CONTEST WITH PHYSICAL NATURE¹

I FANCY that if Christopher Columbus is able at this time to survey this world and see what is happening that he is well pleased at his venturesome voyage. While the nations of the world that he left have their knives at each other's throats the peoples of this new world have sent their most learned men, their philosophers, their scientists, inventors and engineers to talk with one another as to how this new land may become wiser, richer and be made more useful. This is surely a contrast. It is a condition for which my knowledge of history offers no parallel.

There are times I know when nations who believe in themselves must fight. But let us not delude ourselves with the notion that civilization is the product of arms. The only excuse for war is to secure peace, that men of thought, resourcefulness and skill may have opportunity to make themselves masters of the secrets of nature.

For the real battle of the centuries is not between men or between nations or between

racess. The one fight, the enduring contest, is between man and physical nature.

There is no denying the fact that we live in a world that is hostile and secretive. It is organized to destroy us if it can. Our enemies have cunning and ferocity. We have but to fold our arms and the beasts, the flies, the rats, the mosquitoes and the vermin would make us their easy prey. And if they could not win by force, they would bring death by starvation. This world was made for a fighting man and for none other. Softness is not to be our portion, because nature knows no holiday. So man must battle with nature that he may secure that physical peace necessary to give his spirit a chance to show itself in things of beauty and deeds of goodness.

And this is what we call civilization—this triumph over the down-pull of nature. We make her yield. We master her secrets. With wooden club and stone axe, with bow and arrow and with fire man mastered his wild enemies and then with seed and water man mastered the surface of the earth. The sea challenged him and he discovered the floating log, the paddle and then the sail, until he made himself master also of the surface of the sea. These things it took ages to do. Nature revealed nothing. Man had to observe and reflect that he might discover or invent. Was there ever such a discovery as that a planted seed would sprout and yield? Or that the wind would drive a hollowed log?

But these things happened long ago. And now we have made not only the surface of the land and sea our own, but their depths as well. The wind not only fills our sails, but we master the air itself. We make our own lightning and harness it to work for us, to push and to pull, to lift and to turn. We have found the great secret that nature can be made to fight nature. But we must fight with her for our weapons. They are not handed to us; they are hidden from us. If man is to have dominion over this earth, he is committed to an unending search. He must bore and burrow, dig and blast, crush and refine, distill and mix, burn and compress until he forces nature to yield her locked and buried treasures.

¹ Address before the Mining and Geological Section of the Pan-American Scientific Congress.

Nature would have man isolated, but he triumphs over her with billets of steel and threads of copper. He swings a hammer and an engine is made that makes him neighbor to the world. He whispers to a wire which shouts the spoken word into space.

Nature would have a limit to the soil's supporting strength, but man robs the air of its nitrogen and the rocks of their phosphorus and potash to revivify the unwilling earth.

Nature would have man the victim of insidious enemies that stop or clog the human machine, but man distills from the buried carbons agents that stay destruction for a time, and now man has found a mineral which gives promise of opening the way into a new world of mysterious restoration.

This is a glorious battle in which you are fighting—the geologist who reads the hieroglyphs that nature has written, the miner who is the Columbus of the world underground, the engineer, the chemist, and the inventor who out of curiosity plus courage, plus imagination fashion the swords of a triumphing civilization. Indeed it is hardly too much to say that the extent of man's domain and his tenure of the earth rest with you.

F. K. LANE

DEPARTMENT OF THE INTERIOR

DANIEL GIRAUD ELLIOT

IN the death of Daniel Giraud Elliot, which occurred on December 22 last, after a short illness from pneumonia, science has lost a distinguished ornithologist and mammalogist. Dr. Elliot was born in New York City, March 7, 1835, and had therefore nearly completed his eighty-first year. He prepared to enter Columbia College in the class of 1852, but delicate health prevented his taking a college course and led him to seek for several years a mild winter climate, during which he visited southern Europe, Egypt, Palestine, Turkey, the West Indies and Brazil. In 1906 he was honored by Columbia University with the degree of Sc.D. From an early age his interest in natural history was intense, and in its pursuit he traveled widely and spent many years in Europe, chiefly in Paris and London. For

some years before his death he was the dean of American zoologists, exceeding in age his lifelong friend, Dr. Theodore N. Gill, by two years. His primary interest for many years was ornithological, and he was the author of many folio monographs of birds, expensively illustrated with handcolored plates; during the last twenty years he devoted his time to the study of mammals, which became almost exclusively the subject of his researches.

In his early days he formed a notable collection of North American birds—the best private collection then extant—which later was secured by the American Museum of Natural History, forming its first collection of birds and the nucleus of its present magnificent collection. At this time (in the later sixties) George N. Lawrence, a much older man than Elliot, was the only working ornithologist in New York, while John Cassin, of Philadelphia, and Professor S. F. Baird, of Washington, were the only other prominent ornithologists in America.

Dr. Elliot's first publication of note was his "A Monograph of the Tetraonidæ, or Family of the Grouse" (New York, 1864–1865), a work in imperial folio with 27 handcolored plates. This was followed two years later by "A Monograph of the Pittidæ, or Family of the Ant Thrushes" (New York, 1867), also in folio with 31 colored plates. Soon after appeared his "The New and Heretofore Unfigured Species of the Birds of North America" (New York, 1866–1869), in two imperial folio volumes with 72 colored plates. These were soon succeeded by "A Monograph of the Phasianidæ, or Family of Pheasants" (New York, 1872), also in two folio volumes with 48 colored plates. These works, mainly illustrated from his own drawings, were all brought out in America and their preparation marks the period prior to his long sojourn abroad, beginning in 1869, where similar magnificent works were prepared and published in London. These are: "A Monograph of the Paradiseidæ, or Birds of Paradise" (folio, London, 1873, with 37 colored plates); "A Monograph of the Bucerotidæ, or Hornbills" (folio, London, 1876–1882, with 59 colored plates); "A Mono-